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UNITED STATES DEPARTMENT OF AGRICULTURE
Extension Service
and
Agricultural Marketing Service, Cooperating

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TABLES TO ACCOMPANY MISCELLANEOUS PUBLICATION NO. 363

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Miscellaneous Publication No. 363 entitled "Hay Quality" was prepared and published for use by agricultural teachers, extension workers, and others engaged in forage work. It includes some of the more important research data on hay that show a relationship between quality and the feed value of hay and how factors of quality are influenced by hay production practices.

That publication includes many graphs which have been prepared from tabular material from various sources. It was not considered desirable to publish all of these tables in that publication. Recognizing the needs, however, of certain resident and extension teachers for this material, it has been made available in this pamphlet which may be obtained upon request.

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Washington, D. C.
August 1939

Contents*

Hay production and consumption in relation to livestock, 1919-38. Figure 1 - Relation of livestock to hay production and consumption.

Mineral matter in feeding stuffs. Figure 2 - Calcium and phosphorus content of legume and grass hays.

Coefficients of digestibility of medium and good quality Korean lespedeza, Lespedeza sericea and alfalfa hays as determined with eighteen cows producing milk. Figure 3 - Digestibility of hay of different qualities.

Pounds of milk, computed on 4 percent butterfat basis, produced by groups of cows on medium and good quality Korean lespedeza, Lespedeza sericea and alfalfa hays and comparisons between the hays when alfalfa is placed at 100 percent. Figure 4 - Quantity of 4 percent milk produced with different kinds of hay.

Effect of the time of cutting upon the yield of moisture-free alfalfa hay, and upon its protein and fiber. Figure 6 - The yield of hay and protein per acre is influenced by the stage of maturity at which alfalfa is cut.

Effect of stage of maturity of alfalfa on yield of hay, percent leaves, percent protein and total protein. Figure 7 - The more leaves in alfalfa the more protein.

Percent of protein and protein per acre of first cutting alfalfa at different stages of maturity. Figure 8 - Protein in hay and per acre in first cutting alfalfa at different stages of maturity.

Effect of stage of maturity of alfalfa on yield of hay, percent leaves, percent protein, and total protein. Figure 9 - Yields of hay and protein per acre and percentages of leaves and protein in hay for alfalfa cut at various stages of maturity.

Yield of hay, percent of protein in hay and yield of protein per acre for first cutting alfalfa harvested at different dates. Figure 10 - Protein in hay and protein per acre in first crop alfalfa cut at different dates.

Average acre yield of cured hay, crude protein, and digestible protein for timothy cut at different stages of maturity. Figure 11 - Total and digestible protein in timothy at different stages of maturity.

Yield of hay, percentage of protein and yield of protein for timothy cut at different stages of maturity. Figure 12 - Yields of hay and protein per acre of timothy cut at different stages of maturity.

Total yields, percent protein, and total protein per acre for medium, mammoth and alsike clover at different stages of maturity. Figure 13 - Yield of hay and protein per acre and percentage of protein in hay for medium red, mammoth red, and alsike clovers, cut at various stages of maturity.

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*The second part of each title is the figure number and title of the graph in Miscellaneous Publication No. 363 which is based on this table.

Yield of hay, dry matter, milk and butterfat per acre for early- and late-cut soybean hay. Figure 14 - Yield of hay, milk, and butterfat per acre for early- and late-cut alfalfa hay.

Oven dry yield, percent and amount of protein per acre, in soybeans harvested at two-week intervals. (No figure).

Chemical analyses of the leaves, pods, and stems of soybeans during the later stages of the growing period. Figure 15 - Late-cut soybean hay is high in protein because of pods and seed.

Grade and carotene content of samples of the same lot of forage sun-cured and artificially dried. Figure 18 - Carotene content of artificially dried and sun-cured hays.

Yield of alfalfa hay, percent protein in hay and yield of protein per acre according to number of cuttings per season. Figure 19 - Yield of hay, protein per acre, percentage of protein in hay for alfalfa cut two, three, and four times per season.

Effect of immediate and delayed raking with side-delivery and sulky rakes upon quality of alfalfa hay and time required for curing. Figure 20 - Effect of time of raking and type of rake on hours required to cure alfalfa hay.

Comparative rates of curing alfalfa hay in the swath and under various methods of raking and cocking, the hay being cut at 9 a.m. - Figure 21 - Rapidity of curing as affected by time and methods of raking and cocking.

Effect and size of windrow upon quality of alfalfa hay and time required for curing. Figure 22 - Effect of time of raking and size of windrow on time required to cure alfalfa hay.

Effect of immediate and delayed raking and cocking upon quality of alfalfa hay and time required for curing. Figure 23 - Effect of time of raking and cocking and size of cock on time required to cure alfalfa hay.

Effect of turning and scattering partially cured windrowed and cocked hay, after exposure to external moisture, upon its quality and the time required for drying. Figure 24 - Effect of various methods of handling on time required to cure alfalfa hay which has been rained upon.

HAY PRODUCTION AND CONSUMPTION IN RELATION TO LIVESTOCK, 1919-38

Season beginning May 1	Production	Carry-over from previous year	Supply (production plus carry-over)	Indicated disappearance	Supply per hay-consuming animal unit	Indicated disappearance per animal unit	Hay-consuming animal units on farms 1/ Jan. 1
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	Tons	Tons	Thousands
1919	92,487	7,532	100,019	90,709	1.13	1.02	88,795
1920	91,668	9,310	100,978	84,617	1.16	.98	86,774
1921	84,821	16,361	101,182	91,647	1.18	1.06	86,078
1922	95,152	9,535	104,687	93,321	1.24	1.10	84,628
1923	89,418	11,366	100,784	90,083	1.22	1.09	82,822
1924	91,454	10,701	102,155	89,430	1.27	1.11	80,367
1925	78,832	12,725	91,557	82,357	1.18	1.06	77,864
1926	76,025	9,200	85,225	76,736	1.13	1.02	75,478
1927	98,151	8,489	106,640	92,482	1.43	1.24	74,428
1928	83,842	14,158	98,000	89,327	1.30	1.19	75,318
1929	87,280	8,673	95,953	86,554	1.25	1.13	76,822
1930	74,734	9,399	84,133	76,408	1.08	.98	78,084
1931	74,723	7,725	82,448	73,805	1.03	.92	79,841
1932	83,747	8,643	92,390	81,463	1.12	.98	82,850
1933	74,942	10,927	85,869	78,275	1.00	.91	85,872
1934	59,999	7,594	67,593	62,659	.84	.77	80,866
1935	89,526	4,934	94,460	80,736	1.18	1.01	79,869
1936	70,386	13,724	84,110	78,063	1.07	1.00	78,411
1937	82,617	6,047	88,664	75,940	1.07	1.00	78,663
1938 2/	90,743	12,724	103,396	-	-	-	77,649

Based on estimates of Crop Reporting Board.
1/ Thousand head of (horses + mules + milk cows + 0.75 other cattle + 0.12 sheep).
2/ Preliminary.

Mineral matter in feeding stuffs

Feeding stuff	Calcium	Phosphorus
	Percent	Percent
Alfalfa hay	1.43	0.21
Clover hay, red	1.21	0.18
Cowpea hay	1.13	0.25
Lespedeza hay, annual	0.99	0.19
Soybean hay	0.96	0.25
Kentucky bluegrass hay	0.30	0.22
Millet hay, common	0.30	0.17
Timothy hay	0.27	0.16
Oat hay	0.22	0.17
Oat straw	0.36	0.13
Barley straw	0.32	0.09
Wheat straw	0.22	0.07

Compiled from Morrison's "Feeds and Feeding" - Twentieth edition.

Coefficients of digestibility of medium and good quality Korean lespedeza, Lespedeza sericea and alfalfa hays as determined with eighteen cows producing milk[1]

Hays used in trials	Year	Quality of hay	Dry matter	Percentage digestibility of constituents				Total digestible nutrients per 100 lbs. hay containing 90% dry matter
				Protein	Ether extract (fat)	Crude fiber	Nitrogen-free extract (carbohydrates)	
			Percent	Percent	Percent	Percent	Percent	Pounds
Korean lespedeza hay	(1935	Medium	48.2	5.5	51.0	48.3	48.7	39.2
(U.S. #2 Extra Green)	(1936	Good	49.2	50.2	60.8	32.3	55.2	43.7
Lespedeza sericea hay	(1935	Medium	45.5	19.6	42.6	45.2	51.4	39.1
(U.S. #2 Extra Leafy)	(1936	Good	43.5	40.1	36.2	36.7	52.5	40.8
Alfalfa hay	(1935	Medium	60.4	68.4	35.5	49.8	59.1	48.3
(U.S. #1)	(1936	Good	60.6	74.1	42.2	44.8	67.3	52.7

[1]Coefficients determined by difference between the amounts of each constituent digested in the total ration and the amount computed in grain mixture by using Henry and Morrison's coefficients for the grain mixture.

Bulletin 305, Virginia Agricultural Experiment Station

Pounds of milk, computed on 4 percent butterfat basis, produced by groups of cows on medium and good quality Korean lespedeza, Lespedeza sericea and alfalfa hays and comparisons between the hays when alfalfa is placed at 100 percent

Hay fed	Year	Number of cow days on test	Quality of hay	Quantity of hay fed	Quantity of grain fed	4% milk produced from whole ration	4% milk produced from grain[1]	4% milk produced from hay[1]	4% milk produced from 100 lbs. hay	Amount of milk produced by lespedezas for every 100 lbs. produced by alfalfa	Weight gain or loss per cow per day	
											Gain	Loss
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Korean lespedeza	(1935	236	Medium	4279	1972	5604	2414	3190	77.1	78	0	0
	(1936	120	#2 E.G.[2]	1865	1200	2885	1537	1348	73.6	82	0.85	----
Lespedeza sericea	(1935	236	Medium	4273	1972	5617	2408	3209	76.7	78	----	1.15
	(1936	120	#2 E.L.[3]	1885	1200	2922	1598	1324	70.9	79	0.34	----
Alfalfa	(1935	236	Medium	4364	1972	6482	2509	3973	98.3	100	----	0.66
	(1936	120	#1[4]	1909	1200	3246	1559	1687	89.7	100	0.24	----

[1]These amounts are obtained by multiplying the pounds of milk produced per pound of total digestible nutrients in the whole ration by the pounds of digestible nutrients in the grain and hay as determined in the experiments.

[2]U. S. No. 2 Extra Green Lespedeza.

[3]U. S. No. 2 Extra Leafy Lespedeza.

[4]U. S. No. 1 Alfalfa.

Bulletin 305, Virginia Agricultural Experiment Station

Effect of the time of cutting upon the yield of moisture-free alfalfa hay, and upon ite protein and fiber. Average for 4 years, 1921-1924[1]

Stage of maturity	Portion of hay	Acre yield on a moisture-free basis		
		Hay	Protein	Fiber
		Tons	Tons	Tons
Pre-bloom	Hay	2.548	0.552	0.648
	Leaves	1.430	0.414	0.214
	Stems	1.118	0.138	0.434
Initial bloom	Hay	2.578	0.515	0.680
	Leaves	1.428	0.386	0.214
	Stems	1.150	0.129	0.466
One-tenth bloom	Hay	2.848	0.541	0.797
	Leaves	1.534	0.404	0.243
	Stems	1.314	0.137	0.554
One-half bloom	Hay	2.909	0.535	0.847
	Leaves	1.493	0.387	0.240
	Stems	1.416	0.148	0.607
Full bloom	Hay	2.712	0.482	0.854
	Leaves	1.295	0.337	0.227
	Stems	1.417	0.145	0.627

[1]The annual yields of the various food elements were calculated from the composition and yield of each cutting.

Research Bulletin No. 36, Nebraska Agricultural Experiment Station.

Effect of stage of maturity of alfalfa on yield of hay, percent leaves, percent protein and total protein
(Average for 8 years)

Stage of maturity	Yield of moisture-free hay per acre	Leaves in hay	Protein in hay	Total protein per acre
	Tons	Percent	Percent	Pounds
Bud stage	2.427	53.4	19.78	960
1/10 bloom	2.931	51.1	18.92	1,109
Full bloom	3.037	48.4	17.63	1,071
Seed stage	2.647	41.6	16.04	849

Compiled from Technical Bulletin No. 15, Kansas Agricultural Experiment Station

Percent of protein and protein per acre of first cutting alfalfa at different stages of maturity

Stage of maturity (first cutting only)	Date cut	Protein in hay	Protein per acre
		Percent	Pounds
Bud stage	June 4	22.9	812
1/10 bloom	June 23	20.4	1,228
1/2 bloom	June 30	17.9	1,191
Full bloom	July 26	16.9	1,182

Compiled from Bulletin 283, Montana Agricultural Experiment Station.

Effect of stage of maturity of alfalfa on yield of hay, percent leaves, percent protein, and total protein
(Average for 4 years)

Stage of maturity	Yield of moisture-free hay per acre	Leaves in hay	Protein in hay	Total protein per acre
	Tons	Percent	Percent	Pounds
Pre-bloom	2.550	57.3	22.0	1,122
Initial bloom	2.584	56.6	20.0	1,033
1/10 bloom	2.847	55.8	19.2	1,093
1/2 bloom	2.915	53.2	18.8	1,096
Full bloom	2.711	49.4	18.1	981
Seed stage	2.397	33.3	14.1	676

Compiled from Research Bulletin No. 36, Nebraska Agricultural Experiment Station.

Yield of hay, percent of protein in hay and yield of protein per acre for first cutting alfalfa harvested at different dates
(7 year average)

Date cut (first cutting only)	Yield	Protein in hay	Protein per acre
	Pounds	Percent	Pounds
May 31	3,580	18.9	676
June 7 (1/10-1/2 bloom)	4,060	17.4	706
June 14 (full bloom)	4,260	15.8	672
June 21	4,170	14.9	622
June 28	4,240	14.5	614

Compiled from Bulletin No. 137, Ohio Agricultural Extension Service.

Average acre yield of cured hay, crude protein, and digestible protein for timothy cut at different stages of maturity
(Average for 3 years)

Stage of maturity	Yield	Total protein	Digestible protein
	Pounds	Pounds	Pounds
Partly in bloom	5,180	260.9	134.7
Full bloom	5,433	292.6	146.5
Seed formed	5,793	272.2	113.3
Seed in dough	5,750	252.8	98.0
Seed ripe	5,193	218.6	91.9

Compiled from Research Bulletin No. 19, Missouri Agricultural Experiment Station

Yield of hay, percentage of protein and yield of protein for timothy cut at different stages of maturity (4-year average)

Date of cutting	Stage of maturity	Yield of dry hay per acre	Total protein in hay	Yield of protein per acre
		Pounds	Percent	Pounds
June 12	Beginning to head	2,705	9.2	249
18	Fully headed	3,348	8.3	278
23	Early bloom	3,779	7.2	272
July 2	Just passed full bloom	3,927	5.3	208
12	Earliest heads straw colored	4,045	5.1	206
21	Seed nearly mature	3,882	5.0	194

Compiled from data furnished by the Ohio Agricultural Experiment Station

Total yields, percent protein, and total protein per acre for medium, mammoth and alsike clover at different stages of maturity[1]

Stage of maturity when cut[2]	Medium red			Mammoth red			Alsike		
	Yield of hay per acre[3]	Protein in hay[4]	Protein per acre[3]	Yield of hay per acre[3]	Protein in hay[4]	Protein per acre[3]	Yield of hay per acre[3]	Protein in hay[4]	Protein per acre[3]
	Pounds	Percent	Pounds	Pounds	Percent	Pounds	Pounds	Percent	Pounds
Buds	1,530	22.4	343	2,790	18.8	524	1,220	23.7	289
First flowers	1,980	21.1	418	3,070	17.3	531	1,650	21.6	356
50-percent bloom	3,010	15.9	478	3,460	15.9	550	2,160	18.2	393
Full bloom	3,100	14.9	462	3,800	14.4	547	2,810	16.0	450
Ripe	2,610	12.1	316	3,540	12.8	453	3,320	13.4	445

[1]Compiled from Bimonthly Bulletin No. 167, Ohio Agricultural Experiment Station.
[2]The bloom indications given here are only approximate. It is particularly unsatisfactory to designate the stage of maturity of alsike clover by bloom since this clover continues to grow and bloom for a considerable period.
[3]Average of 4 years.
[4]Average of 3 years.

Farmers' Bulletin No. 1770, U. S. Department of Agriculture

Yield of hay, dry matter, milk and butterfat per acre for early and late cut soybean hay (1929)

	Hay per acre	Dry matter per acre	Milk produced per acre	Butterfat produced per acre
	Tons	Tons	Lbs.	Lbs.
Early cut 1/	1.614*	1.470	2,058.0	71.56
Late cut 2/	1.794*	1.608	2,451.0	92.62

*Yields on air-dry basis.

1/ Cut when most of the pods had formed and the lower pods were beginning to fill, the beans in these lower pods being slightly larger than wheat kernels. However, after the hay was cured and at the beginning of the feeding trial, the pods and beans had shrivelled to such an extent that practically no beans could be seen in the pods.

2/ Cut when the pods were completely formed, the beans had practically reached their full development and the lower leaves were turning yellow. After the hay was cured practically no shrivelling of the lower beans could be observed. However, there was practically no shattering of the beans in curing or during feeding.

Purdue University Agricultural Experiment Station Bulletin No. 346.

Oven dry yield, percent and amount of protein per acre, in soybeans harvested at two week intervals - 1926

Date and age of soybeans	Part of plant	Yield per acre--lbs.	Protein		
			Percent-age	Lbs. per ton	Lbs. per acre
June 30 48 days	Leaves	138.5	29.6	428.0	41.0
	Stems	40.0	14.6	78.2	5.8
	Pods	-----	----	-----	----
	Total	178.5	25.10	506.2	46.8
July 14 62 days	Leaves	428.0	27.2	376.6	124.9
	Stems	191.5	12.4	74.4	23.4
	Pods	-----	----	-----	-----
	Total	619.5	22.55	451.0	148.3
July 28 76 days	Leaves	1040.0	27.7	335.0	291.0
	Stems	695.5	8.5	67.5	59.1
	Pods	------	----	-----	-----
	Total	1735.5	20.13	402.5	350.1
August 11 90 days	Leaves	1200.4	20.7	224.0	248.5
	Stems	929.0	9.5	77.5	85.5
	Pods	126.1	21.5	24.4	30.6
	Total	2255.5	16.3	325.9	364.6
August 25 104 days	Leaves	1400.0	20.8	151.2	250.0
	Stems	1440.5	9.1	68.7	312.0
	Pods	992.5	24.7	142.5	135.0
	Total	3832.5	18.12	362.4	697.0
September 8 118 days	Leaves on plant	1351.0	18.2	98.7	244.9
	Leaves dropped	435.0	8.9	15.0	38.8
	Stems	1314.0	7.9	41.9	104.5
	Pods	1900.0	30.0	227.4	572.0
	Total	5000.0	19.15	383.0	960.2
September 22 132 days	Leaves on plant	622.0	13.7	20.0	80.0
	Leaves dropped	668.0	13.1	54.4	87.5
	Stems	1325.0	6.06	38.2	82.7
	Pods	1898.5	30.1	250.0	568.5
	Total	4513.5	18.13	362.6	818.7
October 6 146 days	Leaves on plant	316.0	13.7	20.0	43.4
	Leaves dropped	905.0	8.75	36.2	79.3
	Stems	1350.0	7.48	46.2	101.1
	Pods	1824.5	30.15	251.0	554.2
	Total	4395.5	17.67	353.4	778.0

Compiled from Bulletin No.279, Missouri Agricultural Experiment Station

Chemical analyses of the leaves, pods, and stems of soybeans during the later stages of the growing period
(1930)

From plants	Growing period No. days	Crude protein	Crude fiber
Leaves	90	25.43	10.86
Leaves	97	22.35	19.68
Leaves	104	24.07	20.07
Leaves	110	20.87	19.83
Pods	90	22.22	26.89
Pods	97	22.79	29.78
Pods	104	26.00	18.97
Pods	110	30.05	24.47
Stems	90	11.13	40.87
Stems	97	11.17	44.38
Stems	104	6.07	45.04
Stems	110	7.78	47.39

Purdue University Agricultural Experiment Station Bulletin No. 346.

Grade and carotene content of samples of the same lot of forage sun-cured and artificially dried

Crop	Sun-cured		Artificially dried	
	United States Grade	Carotene	United States Grade	Carotene
		Parts per million		Parts per million
Alfalfa	U.S. No. 2, Heavy Grass Mixed	36	U.S. No. 2, Heavy Grass Mixed	104
Soybean	U.S. No. 1, Extra Green	52	U.S. No. 1, Extra Green	75
Do	U.S. No. 1	17	U.S. No. 2 1/	27
Do	Do	43	U.S. No. 1, Extra Green	64

1/ Slightly scorched while drying

Circular No. 443, U.S. Department of Agriculture

Yield of alfalfa hay, percent protein in hay and yield of protein per acre according to number of cuttings per season (7 year average)

Number of Cuttings	Dates cut	Yield per acre	Protein in hay	Protein per acre
		Pounds	Percent	Pounds
2	June 21 August 25	6,640	15.1	1,010
3	June 10 July 28 September 10	8,550	16.8	1,430
4	May 31 July 3 August 7 September 10	8,170	19.3	1,570

Compiled from Bulletin No. 137, Ohio Agricultural Extension Service

Effect of immediate and delayed raking with side-delivery and sulky rakes upon quality of alfalfa hay and time required for curing (Average of 6 tests)

Time of raking and type of rake	Field-cured hay						
	Hours required	Moisture content	Quality[1]				
			Stems	Color	Leaves	Protein	Grade
		Percent		Percent	Percent	Percent	
Raked immediately after cutting:							
Side-delivery rake	82	22	2.3	53	40	17.4	2L
Sulky rake	78	22	2.0	53	40	17.3	2L
Average	80	22	2.2	53	40	17.3	2L
Raked 4 hours after cutting:							
Side-delivery rake	60	24	2.2	61	40	17.1	1
Sulky rake	59	23	2.2	61	41	17.2	1
Average	60	24	2.2	61	41	17.2	1
Raked 8 hours after cutting:							
Side-delivery rake	54	25	2.0	59	41	17.4	2L
Sulky rake	50	26	2.0	60	42	17.3	1
Average	52	26	2.0	60	42	17.4	1
Raked 24 hours after cutting:							
Side-delivery rake	54	25	2.0	60	40	17.0	1
Sulky rake	50	26	2.2	61	42	17.6	1
Average	52	26	2.1	61	41	17.3	1
Raked when field cured:							
Side-delivery rake	42	27	2.2	56	39	16.5	2
Sulky rake	42	26	2.0	56	38	16.4	2
Average	42	27	2.1	56	39	16.5	2
Raked when overcured:							
With dew on -							
Side-delivery rake	66	21	2.2	47	41	17.3	2L
Sulky rake	66	21	2.2	45	43	17.6	2L
Average	66	21	2.2	46	42	17.5	2L
With dew off -							
Side-delivery rake	66	20	2.5	45	36	16.1	2
Sulky rake	66	20	2.3	43	35	16.2	2
Average	66	20	2.4	44	36	16.2	2

[1]All specific data in these quality notes in this and subsequent tables are averages for the duplicate tests. The commercial grade is based on the averages for the specified quality values. The color values are estimates.

Comparative rates of curing alfalfa hay in the swath and under various methods of raking and cocking, the hay being cut at 9 a.m.

Time and methode of raking and cocking	Moisture content of hay (percent)								
	First day			Second day			Third day		
	9 a.m.	1 p.m.	5 p.m.	9 a.m.	1 p.m.	5 p.m.	9 a.m.	1 p.m.	5 p.m.
Cured in the swath	75.3	57.3	42.5	46.5	28.8	23.8	31.8	19.8	19.3
Raked immediately:									
Small windrow		62.9	51.8	45.7	34.9	29.7	37.4	25.9	21.8
Medium windrow		64.3	54.5	52.3	40.2	33.3	39.6	26.3	22.2
Medium windrow[1]		61.9	53.3	49.3	37.9	32.0	34.7	28.0	21.8
Large windrow		64.4	54.7	56.2	44.5	38.7	43.4	34.4	27.5
Average		63.4	53.6	50.9	39.4	33.4	38.8	28.7	23.3
Cock (average)		67.2	63.2	62.7	60.2	56.5	53.8	50.7	46.4
Raked at 1 p.m.:									
Small windrow			47.7	44.6	31.8	27.1	33.3	22.8	19.3
Medium windrow			45.3	42.7	32.7	31.4	33.2	23.1	22.3
Medium windrow[1]			45.3	42.8	32.6	27.4	31.2	23.0	21.4
Large windrow			47.6	42.9	36.2	32.2	34.0	25.9	24.2
Average			46.5	43.3	33.3	29.5	32.9	23.7	21.8
Cock (average)			49.9	45.8	40.3	37.9	39.2	34.7	32.2

[1]Hay turned after four hours of windrow curing

Technical Bulletin 235, U. S. Department of Agriculture

Effect and size of windrow upon quality of alfalfa hay and time required for curing

Time of raking and size of windrow	Field-cured hay						
	Hours required	Moisture content	Quality 1/				
			Stems	Color	Leaves	Protein	Grade
		Percent		Percent	Percent	Percent	
Raked immediately after cutting:							
Small windrow	64	25	2.1	54	41	17.3	2 L
Medium windrow	80	22	2.2	53	40	17.4	2 L
Large windrow	92	27	2.1	53	44	18.4	2 L
Average	78	25	2.1	53	42	17.7	2 L
Raked 4 hours after cutting:							
Small windrow	50	25	2.3	61	40	16.9	1
Medium windrow	60	24	2.2	61	41	17.2	1
Large windrow	71	24	2.2	63	41	17.3	1
Average	60	24	2.2	62	41	17.1	1

1/ All specific data in these quality notes in this table are averages for the duplicate tests. The commercial grade is based on the averages for the specific quality values. The color values are estimates. The percentage of leaves is on a moisture-free, total-weight basis. The numerical values of stems are straight averages which have the following significance; 1, Pliable; 2, medium hard and brittle; 3, hard and brittle; 4, very hard and brittle; L., leafy; Exl., extra leafy. S and a superior number following indicate the sample grade and its frequency.

Technical Bulletin 235, U.S. Department of Agriculture

Effect of immediate and delayed raking and cocking upon quality of alfalfa hay and time required for curing
(Average of 6 tests)

Time of raking and cocking and size of cock	Field-cured hay						
	Hours required	Moisture content	Quality[1]				
			Stems	Color	Leaves	Protein	Grade
		Percent		Percent	Percent	Percent	
Raked immediately after cutting:							
Medium windrow	80	22	2.2	53	40	17.4	2 L
Cocked at once -							
Small cock	185	24	2.2	46	40	17.0	2 L-S3
Large cock	246	22	2.0	38	41	17.2	2 L-S5
Cocked after 4 hours -							
Small cock	182	20	2.0	50	41	17.2	2 L-S3
Raked 4 hours after cutting:							
Medium windrow	60	24	2.2	61	41	17.2	1
Cocked at once -							
Small cock	177	19	2.2	54	40	17.6	2 L-S2
Large cock	224	21	2.0	51	42	17.3	2 L-S1
Cocked after 4 hours -							
Small cock	177	19	2.2	53	41	17.6	2 L-S2
Raked 8 hours after cutting:							
Medium windrow	52	26	2.0	60	42	17.4	1
Cocked at once -							
Small cock	145	21	2.2	58	42	17.4	2 L-S2
Large cock	172	23	2.0	53	41	17.5	2 L-S3
Raked 24 hours after cutting:							
Medium windrow	52	26	2.1	61	41	17.3	1
Cocked at once -							
Small cock	150	20	2.2	54	42	17.5	2 L-S1
Large cock	160	24	2.0	52	40	17.1	2 L-S3

[1] All specific data in these quality notes in this table are averages for the duplicate tests. The commercial grade is based on the averages for the specific quality values. The color values are estimates. The percentage of leaves is on a moisture-free, total-weight basis. The numerical values of stems are straight averages which have the following significance: 1, Pliable; 2, medium hard and brittle; 3, hard, and brittle; 4, very hard and brittle; L., leafy; Exl., extra leafy. S., and a superior number following indicate the sample grade and its frequency.

Technical Bulletin 235, U.S. Department of Agriculture

Effect of turning and scattering partially cured windrowed and cocked hay, after exposure to external moisture, upon its quality and the time required for drying

Treatment	Number of plots averaged	Field-cured hay					
		Hours required	Moisture content	Quality[1]			
				Color	Leaves	Protein	Grade
			Percent	Percent	Percent	Percent	
Tests beginning June 18:							
Windrows -							
Turned	15	167	19	40	34	16.5	2
Not turned	15	186	20	39	33	16.3	2
Cocks -							
Scattered	4	192	19	40	34	16.5	2-S1
Not scattered	4	300	25	41	36	16.7	2-S2
Tests beginning August 14:							
Windrows -							
Turned	2	131	15	43	38	17.0	2-S2
Not turned	2	131	15	40	38	16.9	2-S2
Cocks -							
Scattered	12	142	13	44	36	16.2	2-S5
Not scattered	12	159	19	53	38	16.5	2-S9
Averages:							
Windrows and cocks -							
Turned or scattered	33	159	16	42	35	16.4	2-S9
Not turned or scattered	33	187	20	43	36	16.5	2-S13

[1] All specific data in these quality notes in this table are averages for the duplicate tests. The commercial grade is based on the averages for the specific quality values. The color values are estimates. The percentage of leaves is on a moisture-free, total-weight basis. The numerical values of stems are straight averages which have the following significance: 1, Pliable; 2, medium hard and brittle; 3, hard and brittle; 4, very hard and brittle; L., leafy; Exl., extra leafy. S and a superior number following indicate the sample grade and its frequency.

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